

REMARKS

Entry of the foregoing, reexamination and reconsideration of the subject application are respectfully requested in light of the amendments above and the comments which follow.

As correctly noted in the Office Action Summary, claims 1-17 and 19-48 were pending, with claims 38-48 being withdrawn from consideration. By the present response, claims 10 and 19 have been amended, and claims 49-51 have been added. Thus, upon entry of the present response, claims 1-17, 19-37 and 49-51 remain pending and await further consideration on the merits.

Support for the foregoing amendments can be found, for example, in at least the following locations in the original disclosure: page 5, Table 1; and the original claims.

ELECTION/RESTRICTION

Applicant notes with appreciation the indication in paragraph 1 of the Official Action that claims 1-17 and 19-37 have been associated with elected Group I, and have been examined together on the merits. Applicant also notes that the requirement for election between Groups I and IV has been made final. Having timely traversed the restriction requirement by the response dated July 20, 2006, applicant has preserves the right to petition the restriction requirement and/or file one or more divisional applications directed to the non-elected subject matter.

CLAIM OBJECTIONS

Claim 10 is objected to because of informalities. Claim 10 has been amended to address the objection. Thus, reconsideration and withdrawal of the objection is respectfully requested.

CLAIM REJECTIONS UNDER 35 U.S.C. §112

Claims 1-17, 29, 31-33 and 36 stand rejected under 35 U.S.C. §112, first paragraph, on the grounds set forth in paragraph 6 of the Official Action.

This rejection is respectfully traversed. As set forth in MPEP §2164.04:

In order to make a rejection, the Examiner has the initial burden to establish a reasonable basis to question the enablement provided for the claimed invention. *In re Wright*, 999 F.2d 1557, 1562, 27 USPQ2d 1510, 1513 (Fed. Cir. 1993) (Examiner must provide a reasonable explanation as to why the scope of protection provided by claim is not adequately enabled by the disclosure). A specification disclosure which contains a teaching of the manner and process of making and using an invention in terms which correspond in scope to those used in describing and defining the subject matter sought to be patented must be taken as being in compliance with the requirement of 35 U.S.C. §112, first paragraph, unless there is a reason to doubt the objective truth in the statements contained therein which must be relied on for enabling support.

The grounds of rejection clearly fail to meet the above-stated burden.

More specifically, it is asserted in paragraph 6 of the Official Action that: "the refractive index of the frits is critical or essential to the practice of the invention, but not included in the claim(s) is not enabled by the disclosure." This assertion is respectfully traversed. Contrary to the above-quoted statement, the refractive index of the frits is not critical or essential to the practice of the present invention. There is nothing contained in the present disclosure to indicate otherwise. In fact, quite the

opposite is true. The present disclosure, when read as a whole, makes it abundantly clear that the particular refractive index of the frits is not a critical or essential feature to the successful practice of the present invention as alleged. As stated in MPEP §2164.08(c):

Limiting an applicant to the preferred materials in the absence of limiting prior art would not serve the constitutional purpose of promoting the progress in the useful arts. Therefore, an enablement rejection based on the grounds that the a disclosed critical limitation is missing from a claim should be made only when the language of the specification makes it clear that the limitation is critical for the invention to function as intended. Broad language in the disclosure, including the abstract, omitting an allegedly critical feature, tends to rebut the argument of criticality.

Applicant notes that neither the Abstract, nor the Summary of the Invention sections of the present specification even mention the refractive index of the frits. Thus, it is clear that the premise upon which the grounds for rejection is based is inaccurate. For at least the reasons stated above, the rejection is legally deficient and must be withdrawn. In re Goffe, 191 USPQ 429 (CCPA 1976).

Claims 1, 4-17, 29, 31-33 and 36 stand rejected under 35 U.S.C. §112, first paragraph, on the grounds set forth in paragraph 7 of the Official Action.

This rejection is respectfully traversed. More specifically, it is asserted in paragraph 7 of the Official Action that the above-listed claims are enabling only for refractory fillers as listed in Table 1 of page 5 of the present specification. This assertion is respectfully traversed.

First, as explained above, the Examiner bears the burden of demonstrating a basis to doubt the objective truth of the statement contained in the original disclosure with respect to enablement. In this regard, applicant notes that the original

specification describes the present invention in terms which mirror the scope of the above-listed claims:

In order to provide optimum results, the refractory filler should have a thermal expansion lower than the thermal expansion of the frits used in the pressable core material and a refractive index within about 0.2 of the refractive index of the frits. Page 5, lines 2-6.

Thus, having described the present invention in terms having the scope commensurate with that of the above-listed claims, the enablement requirement of 35 U.S.C. §112, first paragraph, has clearly been met. The grounds for rejection offer no explanation as to why the above-quoted description is insufficient to meet the enablement requirement of 35 U.S.C. §112, first paragraph. Essentially, the grounds for rejection attempt to narrow the scope of the claims, without the basis and the prior art for doing so. Such attempts have not been successful with the reviewing authorities:

For all practical purposes, the Board would limit Appellant to claims involving the specific materials disclosed in the examples, so that a competitor seeking to avoid infringing the claims would merely to have to follow the disclosure in the subsequently issued patent to find a substitute. However, to provide effective incentives, claims must adequately protect inventors. To demand that the first to disclose shall limit his claims to what he has found will work or to materials which meet the guidelines specified or "preferred" materials in a process such as the one herein involved would not serve the constitutional purpose of promoting progress in the useful arts. In re Goffe, 191 USPQ at 431.

Thus, for at least the reasons set forth above, reconsideration and withdrawal of the rejection is respectfully requested.

Claim 3 stands rejected under 35 U.S.C. §112, first paragraph, on the grounds set forth in paragraph 8 of the Official Action.

This respectfully is respectfully traversed. More specifically, it is asserted in paragraph 8 of the Official Action that the specification does not reasonably provide enablement for fumed silica, a material which is recited in dependent claim 3. In this regard, applicant notes that original claim 3 forms a part of the original disclosure of the present application. Original claim 3 specified that when the refractory filler was composed of silica, the silica is in the form of amorphous silica, and more particularly, is selected from the group consisting of fused silica, fumed silica, and mixtures thereof. Thus, a basis exists in the original disclosure for the enablement of claim 3. As explained above, the Examiner bears the burden of establishing the basis to challenge the objective truth of the statements contained in the original disclosure which would support the teaching of how to make and/or use the present invention. The grounds for rejection clearly lack any such explanation to challenge the objective truth of the statements contained in the original disclosure supporting the scope of original claim 3. In addition, by the present response, applicant has amended the specification, at page 4, by inserting express support for the subject matter of dependent claim 3 therein. Thus, in light of the above, reconsideration and withdrawal of the rejection is respectfully requested.

Claims 1-17, 29, 31-33 and 36 stand rejected under 35 U.S.C. §112, second paragraph, on the grounds set forth in paragraph 10 of the Official Action.

This rejection is respectfully traversed. More specifically, it is asserted in paragraph 10 of the Official Action that the above-listed claims fail to comply with the requirements of 35 U.S.C. §112, second paragraph ("as being incomplete for omitting essential elements, such omission amounting to a gap between the

elements"). This assertion is respectfully traversed. As explained above, contrary to the assertions contained in paragraph 10 of the Official Action, the refractive index of the frits is not an essential element of the present invention. This point is made clear by reference, for example, to the Summary of the Invention and the Abstract sections thereof. Thus, for at least the reasons explained above, reconsideration and withdrawal of the rejection is respectfully requested.

CLAIM REJECTIONS UNDER 35 U.S.C. §102

Claims 1-2, 4-10, 12-17, 19-28 and 31-35 stand rejected under 35 U.S.C. §102(e) as being anticipated by U.S. Patent No. 6,706,654 to van der Zel (hereafter "*van der Zel*") on the grounds set forth in paragraph 12 of the Official Action. For at least the reasons noted below, this rejection should be withdrawn.

The present invention is directed to a dental ceramic. A dental ceramic formed according to the principles of the present invention is both compatible with porcelain materials, and is capable of being directly pressed to metal. A dental ceramic formed according to the principles of the present invention is set forth in claim 1. Claim 1 recites:

1. A dental ceramic comprising: a glass frit; a glass-ceramic frit comprising leucite; and a refractory filler having a thermal expansion lower than the thermal expansion of the frits and a refractive index within ± 0.2 of the refractive index of the frits; wherein leucite is present in the dental ceramic in an amount less than about 35% by weight; wherein the thermal expansion of the dental ceramic is in the range of about $12.5 \times 10^{-6}/^{\circ}\text{C}$ to about $14.5 \times 10^{-6}/^{\circ}\text{C}$ measured from room temperature to 500°C ; wherein the dental ceramic is pressable from about 980°C to about 1030°C ; and wherein the dental ceramic can withstand firing of a porcelain onto the dental ceramic without distortion of the dental ceramic at a range from about 830°C to about 900°C .

A dental ceramic formed according to a further aspect of the present invention is set forth in claim 19:

19. A dental ceramic comprising a: a glass frit; a glass-ceramic frit comprising leucite; and a refractory filler; wherein the glass frit has an average particle size equal to or greater than about six times the average particle size of the glass-ceramic frit.

Contrary to the assertions contained in paragraph 12 of the Official Action, *van der Zel* fails to anticipate either claim 1 or claim 19.

As evident from the above, both claims 1 and 19 each require a dental ceramic comprising "a glass frit; a glass-ceramic frit comprising leucite; and a refractory filler." *van der Zel* fails to anticipate at least this aspect of claims 1 and 19. For example, *van der Zel* fails to disclose a dental ceramic comprising glass-ceramic frit comprising leucite as required by the presently claimed invention. To the contrary, *van der Zel* expressly teaches away from a dental ceramic having this constituent component:

More particularly, it has surprisingly been found that if leucite is not added in the form of a high leucite glass frit but as a fine-ground pure synthetic leucite in crystalline form, this dissolving reaction does not occur. Through the amount of leucite added, the thermal expansion can be completely adjusted to the porcelain to be fired on, while during the different firing phases, the thermal expansion does not decrease, as is the case upon conventional addition of high leucite frit (emphasis added). (Column 2, lines 50-58.)

Thus, *van der Zel* fails to anticipate either claims 1 or 19. In addition, the dental ceramic of *van der Zel* is formed with two constituent components:

To that end, the invention also relates to a method for fabricating a dental product, wherein the sintered-up product obtained, by mixing 30-90 parts by weight of a powdered lithium silicate glass and 10-70 parts by weight of powdered synthetic leucite and then heating

the mixture under vacuum until the sintered up product is obtained .
... (Column 5, line 63-column 6, line 2.)

Thus, *van der Zel* clearly fails to disclose a dental ceramic comprising a glass frit; a glass ceramic frit comprising leucite, and a refractory filler, as required by claims 1 and 19.

Thus, for at least the reasons explained above, reconsideration and withdrawal of the rejection is respectfully requested.

CLAIM REJECTIONS UNDER 35 U.S.C. §103

Claims 11, 29-30 and 36-37 stand rejected under 35 U.S.C. §103(a) as being unpatentable over *van der Zel* as applied to claims 1 and 19, and further in view of U.S. Patent No. 4,604,366 to Kacicz et al. (hereafter "*Kacicz et al.*") on the grounds set forth in paragraph 13 of the Official Action. For at least the reasons noted below, this rejection should be withdrawn.

van der Zel is applied as set forth above, and in paragraph 12 of the Official Action. As explained above, contrary to the assertions contained in paragraph 12 of the Official Action, *van der Zel* fails to disclose certain limitations contained in claims 1 and 19.

Kacicz et al. is cited as allegedly teaching the use of an additional glass frit and metal core with a porcelain overlay. However, even if *Kacicz et al.* were applied in the manner suggested, the claimed invention would not result. Namely, *Kacicz et al.* fails to cure the deficiencies previously discussed above in connection with the disclosure of *van der Zel* .

Moreover, *Kacicz et al.* teaches a porcelain material having as one constituent component thereof, a glass ceramic material composed of a first amount of leucite crystals dispersed in a glassy phase matrix (see, e.g., claim 1 of *Kacicz et al.*). By contrast, as explained in detail above, *van der Zel* expressly teaches away from relying upon leucite dispersed in a glass phase material. Instead, *van der Zel* teaches utilizing pure synthetic leucite in crystalline form. Thus, one of ordinary skill in the art would not have sought to combine the teachings of *van der Zel* and *Kacicz et al.* in the manner suggested.

Thus, for at least the reasons explained above, reconsideration and withdrawal of the rejection is respectfully requested.

CONCLUSION

From the foregoing, further and favorable action in the form of a Notice of Allowance is earnestly solicited. Should the Examiner feel that any issues remain, it is requested that the undersigned be contacted so that any such issues may be adequately addressed and prosecution of the instant application expedited.

Respectfully submitted,

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